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Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of

Petition for Rulemaking Seeking	)	
Amendment of the Commission's	)	
Rules to Allocate Spectrum and to	)	RM-
Establish Service Rules for a	)	
New Low-Power Location Service	)	

To: The Secretary

PETITION FOR RULEMAKING

THE FAMILY SECURITY COMPANY

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October 29, 2003

Summary

The Family Security Company ("FSC") requests that the Commission initiate a formal rulemaking proceeding to allocate spectrum and establish service rules for a new radio service, the Low-Power Location Service ("LPLS"). FSC requests that the Commission establish the LPLS as a new radio service and allocate a minimum of six UHF channels to the new service.

FSC was established in October of 2000 for the express purpose of deploying an affordable technological solution to the urgent national problem of quickly locating and rescuing missing and exploited children and adults. FSC, in cooperation with corporate partners, plans for the deployment of a nationwide network of base stations to receive and process periodic burst transmissions from small and lightweight subscriber units. The subscriber units are intended to be offered at retail for a price under $40 and to be no larger than a large key fob.

Upon activation, the subscriber unit will transmit its unique electronic serial number ("ESN"), in encrypted form, to all base stations in the vicinity. The base stations will monitor the radio channels, record the time and content of messages received from Emergency Tracking Service subscriber units and periodically upload the data (typically via ISDN, DSL or other communications channels) to the Emergency Tracking Service Bonded central monitoring facility. When a person is reported missing, the central monitoring facility will first verify the authenticity of the event, and identity of the parent or guardian reporting the disappearance. Then the Emergency Tracking Service central monitoring facility will release to the responsible law enforcement authorities all data in

its possession concerning the past and present location of the subscriber unit in question to assist in the search and rescue.

With the appropriate spectrum etiquette in place, LPLS channels could be available on a shared, non-exclusive basis for use by the Family Security Company and other entities utilizing compatible technologies to offer location-based services. The cost savings and efficiencies associated with the proposed modest allocation of UHF spectrum to the LPLS will enable manufacturers and service providers to introduce a new generation of devices and services, readily affordable to families regardless of income, capable of locating missing children and adults and ensuring that authorized emergency personnel are able to quickly come to their aid.

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PETITION FOR RULEMAKING

The Family Security Company, by its attorneys and pursuant to Section 1.401 of the Commission's Rules,[1] hereby requests that the Commission initiate a formal rulemaking proceeding to allocate spectrum and establish service rules for a new radio service, the Low-Power Location Service ("LPLS").

INTRODUCTION

The Family Security Company ("FSC") was established in October of 2000 for the express purpose of deploying an affordable technological solution to the urgent national problem of quickly locating and rescuing missing and exploited children and adults. Participants in FSC include Mr. John Walsh, Host, and Mr. Lance Heflin, Executive Producer, of the television program "America's Most Wanted."

In the past, the founders of the Family Security Company have worked directly with the Security Industry Association and the International Association of Chiefs of Police Private Liaison Committee to define acceptable mobile alarm monitoring practices for the tracking and recovery of missing and exploited children and adults. The FSC has

[1] 47 C.F.R. § 1.401.

painstakingly developed all required policy and criteria essential to deployment of the Low-Power Location Service ("LPLS"). The Family Security Company had previously planned to deploy its Emergency Tracking Service ("ETS")[2] in two distinct phases. Phase I of the deployment would have permitted limited location information to be passed over Multi-Use Radio Service ("MURS") channels from the subscriber unit, a device no larger than a small FRS Radio, to one or more base stations.[3] The base stations would have communicated directly with a central monitoring station, which would interface with local and national authorities in the case of an abducted or missing person. Through intensive investigation and industry analysis, the FSC has determined that, due to the absence of significant development of high tech components suited for the MURS frequencies, the MURS frequencies are not well-suited for the initial deployment of this service, given the cost and size constraints of the consumer device market.

The planned second phase was to be implemented following the completion of a Commission rulemaking proceeding leading to the allocation of spectrum and the establishment of service rules for a new radio service, the Low-Power Location Service ("LPLS"). Due to the lack of MURS frequency components compatible with the cost and size considerations of consumer devices, and with the knowledge that the public nature and potential overuse of the MURS frequencies might soon require the Family Security

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[2] Throughout this petition, the term "Low-Power Location Service" or "LPLS" refers to the radio service, consisting of multiple UHF channels to be licensed by rule and shared among users of a wide variety of geolocation services, not all of which would necessarily involve tracking the movements of persons. For example, a variant of the technology could be used by auto dealers to locate cars in inventory on their lots The term "Emergency Tracking Service" or "ETS" refers to the proposed service offering of the Family Security Company.

[3] The Phase I subscriber unit would incorporate both a receiver (to conform to the listen-before-talk protocol mandated under the MURS rules) and a transmitter, but it would not provide the capability for voice or data communications in the base-to-mobile direction.

Company to develop and deploy a next-generation technology in dedicated spectrum, the decision has been made to abandon further development in the MURS frequencies, in favor of a one-time development in a more suitable spectrum band.

Accordingly, the FSC requests that the Commission initiate a formal rulemaking proceeding to allocate spectrum and establish service rules for a new radio service, the Low-Power Location Service ("LPLS").

With the allocation of spectrum to the LPLS in the UHF band, manufacturers and service providers, as well as the public, would benefit immensely from additional cost savings and efficiencies, and service providers could initiate service offerings that cannot be accommodated in the VHF MURS band. For these reasons, the Family Security Company requests that the Commission establish the LPLS as a new radio service and allocate a minimum of six UHF channels to the new service.

DISCUSSION

I. The Public Interest Requires that the Commission Recognize and Accommodate the Low-Power Location Service.

The public interest in protecting and recovering missing and abducted children cannot be overstated. According to the most recent statistics from the U.S. Department of Justice's Office of Juvenile Justice and Delinquency Prevention the total number of children who were missing from their caretakers in 1999, including children who were reported missing and those who were not, is estimated to be 1,315,600.[4] These statistics

[4] Summary of the National Incidence Studies of Missing, Abducted, Runaway, and Thrownaway Children, http://www.missingkids.com/en_US/documents/nismart2_overview.pdf (visited October 27, 2003).

mean that 2,000 children per day go missing or are abducted.[5] Time is of the essence in such cases. The longer an individual remains missing, the lower her chances of successful recovery. The State of Washington's Office of the Attorney General estimates that 74 percent of abducted children who are murdered are dead within three hours of the abduction.[6] The cost to society in terms of personal loss and resources expended on possible recovery is untold.

In addition, there are an estimated 4.5 million victims of Alzheimer's disease in the United States today.[7] Many of these individuals are at least occasionally disoriented and at significant risk of wandering into harm's way. Many regret the loss of independence that occurs when they are no longer able to look after themselves, and family members face either anxiety in permitting them to live on their own or guilt in forcing them into professional care facilities. Again, the costs to both family and society are great.

The Family Security Company exists for the express purpose of addressing these important personal safety issues. The Family Security Company's development of the ETS system responds to the overwhelming and immediate need for a personal monitoring system designed to prevent child abduction, assist in the recovery of those kidnapped, and permit safe, effective monitoring of loved ones. Indeed, the impetus for the Family Security Company and the ETS arose in part out of the horrible personal tragedy suffered

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[5] FAQs and Statistics, National Center for Missing and Exploited Children, http://www.missingkids.com/missingkids/servlet/PublicHomeServlet?LanguageCountry=en_US (visited October 27, 2003).

[6] *Id*

[7] Statistics about Alzheimer's Disease are available from the web site of the Alzheimer's Association at http://www.alz.org/AboutAD/Statistics.htm (visited October 27, 2003).

by FSC's John Walsh. In 1981, authorities found John's six year-old son, Adam, brutally murdered two weeks after being abducted.

Millions of other families around the United States have suffered the tremendous anxiety that results when a loved one goes missing. Millions of dollars are spent each year on the ransom and attempted recovery of such loved ones. The Family Security Company, among others, has been working for several years to develop a cost-effective solution to these serious societal problems.[8]

The successful deployment of the Emergency Tracking Service would bring relief to and prevent the suffering of so many. A sufficient number of suitable channels are needed to allow this service, and other compatible offerings, to expand to meet the expected demand. Therefore, the Commission should take this opportunity to initiate a formal rulemaking to establish service rules and allocate spectrum for the LPLS.

The Family Security Company's Plans for Deployment of the ETS.

The Family Security Company, in cooperation with corporate partners, plans for the deployment of a nationwide network of base stations to receive and process periodic burst transmissions from the proposed small and lightweight subscriber units. The subscriber units are intended to be offered at retail for a price under $40 and to be no larger than a large key fob.

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[8] A number of companies—including GPSTracks, Digital Angel, and Wherify—have developed monitoring and recovery technologies similar to the FSC's Emergency Tracking Service; however, the initial cost of competitors' service (approximately $400 for the subscriber unit and $30 per month for monitoring) would severely tax the resources of many families The Emergency Tracking Service technology, in contrast, is designed to make personal monitoring services available to all Americans for a price of approximately $30 for the subscriber unit and less than $5 per month for monitoring

When a subscriber unit is purchased by subscribers, (and prior to activation), its unique electronic serial number ("ESN"), along with the registered user's name, address and contact information will be registered in the Emergency Tracking Service master database by the selling dealer. Upon activation, the subscriber unit will wait until a pre-programmed time interval (approximately five minutes) has passed. Then, after monitoring the approved channels to ensure that its scheduled transmission will not cause harmful interference, the subscriber unit will transmit its ESN, in encrypted form, to all base stations in the vicinity. The base stations will monitor the radio channels, record the time and content of messages received from Emergency Tracking Service subscriber units and periodically upload the data (typically via ISDN, DSL or other communications channels) to the Emergency Tracking Service Bonded central monitoring facility.[9] When a person is reported missing, the central monitoring facility will first verify the authenticity of the event, and identity of the parent or guardian reporting the disappearance. Then the Emergency Tracking Service central monitoring facility will release to the responsible law enforcement authorities all data in its possession concerning the past and present location of the subscriber unit in question to assist in the search and rescue. It should be noted that under no circumstances would the ETS system allow for polling by any person other than those bonded and authorized by the Family Security Company. Family Security Company specifically cautions that the FCC should not allow for polling activities for any location-finding device other than by bonded

[9] As currently envisioned by the Family Security Company, there would be a modest monthly subscription fee to help defray the costs associated with the central monitoring facility and the base station network. To keep the service affordable to families, FSC will solicit corporate sponsorships, as well as donations of base station sites and "backhaul" network capacity between the base stations and the central monitoring facility

monitoring attendants. The Family Security Company further cautions that the use of polling other than by bonded monitoring attendants opens the door to electronic stalking by predators. The ease with which predators could abuse such access, and the subsequent increase in the number of cases of stalking and disappearance, would be staggering.

II. The Commission Should Initiate a Rulemaking to Establish the LPLS in the UHF Band.

Although the Commission has allocated spectrum for many commercial and non-commercial radio services, none of the existing spectrum allocations services fully satisfies the long-term requirements of the Family Security Company. The Family Security Company believes that there is an urgent need for a separate allocation for services such as its Emergency Tracking Service.

The Family Security Company has identified several UHF frequencies, including 90 channels in the 450-470 MHz Private Land Mobile Radio ("PLMR") spectrum, that it believes will permit it to obtain low-cost technological inputs and to develop service enhancements to the basic Emergency Tracking Service. More specifically, the Family Security Company has been in discussions with several potential subscriber unit manufacturers with regard to the technological inputs required and has concluded that subscriber unit components are available today, and available at much lower costs, for these UHF frequencies than for the VHF MURS frequencies. The contemplated Emergency Tracking Service would take advantage of equipment cost savings, network efficiencies and service improvements that only UHF channels will make possible. For example, smaller and more efficient UHF antennas result in subscriber units in a smaller, easier to carry, form factor. This makes the subscriber equipment more useful to consumers. Equipment cost savings are critically important, as these savings can then be

passed on to the consumer, resulting in affordable family security protections for all Americans, regardless of income status.

Moreover, the Family Security Company plans to initiate a variety of service enhancements to the basic ETS service in order to make it a more effective monitoring and recovery tool. Specifically, recent advancements in technology have made it possible to incorporate miniaturized GPS receivers into small, lightweight devices, including devices as small as pendants or wristwatches. What is currently missing from the equation is a ubiquitous, affordable, secure and reliable means of relaying the location information acquired by GPS receivers to those best able to use it to effect a rescue, the local law enforcement agencies. The Family Security Company is developing a next-generation technology to fill this void.

The Family Security Company's next-generation system will represent a substantial advancement over any existing technology. The subscriber units will be small, lightweight and offered at affordable prices. The subscriber units will have a default-operating mode that uses spectrum efficiently, including listen-before-transmit short duty cycle operation. The subscriber units will transmit not only their encrypted ESNs, but also GPS-derived position data during every scheduled transmission. In addition, once an authenticated missing persons report is received by the Emergency Tracking Service central monitoring facility, the system will be capable of sending a priority signal to the subscriber unit, directing it to provide more frequent position updates.

The Emergency Tracking Service will gather and display on a secure password protected web site, accessible only by the relevant law enforcement agency, the historical and current location of the missing person's subscriber unit.

To bring the system to market, the Family Security Company requires access to at least six UHF channels. Four channels, used in the mobile-to-base direction, would be used for non-emergency reporting. The fifth channel, used in the base-to-mobile direction, would be used to transmit acknowledgments and control signals. The sixth channel would be reserved for real-time location tracking of a subscriber unit once a missing persons incident occurred. With the appropriate spectrum etiquette in place, at least the four non-emergency channels could be available on a shared, non-exclusive basis for use by the Family Security Company and other entities utilizing compatible technologies to offer their own competing services.

The number of channels needed is driven largely by the anticipated number of users in urban markets. Consider a one square mile area within a major city, with two schools, a shopping mall, and medium density residential housing. There are two major thoroughfares and perhaps a freeway passing through this area. During peak school and business hours, there are typically 4000 persons within the area. With the implementation of the FCC's E-911 rules for commercial mobile services, approximately half of the persons in the area (assuming a typical CMRS penetration rate on the order of 50%) will have a wireless phone with position location capability. The target market for the Emergency Tracking Service is the 50% of the population that does not carry a wireless phone. Each ETS subscriber device will have a default-reporting interval, which is likely to be on the order of five minutes. The 2000 ETS subscriber devices (one for each person in the area without a mobile phone) would then transmit 12 times per hour. This represents a total of 24,000 transmissions per hour, or 400 per minute or seven per second. Each device will be pre-programmed to accomplish the following tasks:

1) Scan the four available frequencies allocated by the system to subscriber unit reporting;

2) Lock on to an unused frequency;

3) Transmit data (at a minimum, encrypted ESN and GPS-derived position data; additional data fields may be supported when enhanced services are offered);

4) Tune to the fifth (acknowledgement) frequency and wait to hear confirmation that the data was received. If no acknowledgement is received within a preset interval, the cycle (listen, transmit, wait for acknowledgement) is repeated automatically at variable decreasing intervals.

5) Repeat the above steps at five-minute intervals.

To accommodate the possibility of very high traffic loads, the system will have the ability, via the acknowledgement channel, to instruct subscriber units to increase the reporting interval, to ten minutes, thirty minutes or more. This feature permits the system to sustain high volumes of traffic at peak periods.

When a missing person is reported, and the status is confirmed under the requirements of the "Mobile Security Device Monitoring Standards and Practices" adopted by the International Association of Chiefs of Police, the system's sixth channel will be used for real-time monitoring of a specific incident. The central monitoring facility, via the base station network, will transmit a message over the acknowledgement channel instructing the victim's device to transmit on the sixth channel, decrease the location reporting interval to once per second and lengthen the data burst transmission time. The decreased location reporting interval will allow for real-time tracking. The lengthened data burst transmission will facilitate the use of direction-finding equipment.

Having one channel set aside for emergency monitoring and tracking ensures that other traffic will not interfere with signals from the missing person's unit.

The Family Security Company believes that the allocation of a minimum of six channels (four for non-emergency reporting, one for downstream acknowledgement and control and a sixth for emergency real-time location and monitoring of missing persons at the request of law enforcement agencies) is required in the public interest. Fewer channels would involve unacceptable trade-offs in system performance (ability to handle typical traffic loads in an urban setting) and in the cost and sophistication of subscriber units and base stations. Indeed, six channels may not be sufficient over the very long term to meet the demand for Emergency Tracking Service at peak hours. As experience has shown in the case of cellular and other mobile technologies, the initial estimates of demand may be too low. However, the Family Security Company believes it is better to start with a conservative spectrum request with the possibility of seeking additional spectrum once the technology and its market are well established than to seek a generous allocation of spectrum at the outset.

The Family Security Company requests that no individual station licenses be required for either base stations or subscriber units, allowing unlicensed (or, more accurately, licensed by rule) operation consistent with the technical and operational rules adopted in the requested rulemaking proceeding. The ETS can be readily accommodated as a new subpart under Part 95 of the Commission's Rules.[10] The relatively minimal technical and operating rules outlined in this petition, and to be more fully developed in the Commission's rulemaking proceeding, will promote efficient use of spectrum through

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[10] 47 C.F.R 95.

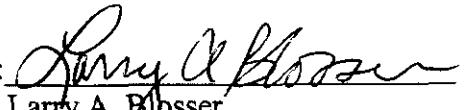
various means, including limitations on the power of individual transmitters and the adoption of an emission mask to limit interference to adjacent channels.

CONCLUSION

For the foregoing reasons, the Family Security Company respectfully requests that the Commission initiate a rulemaking proceeding to allocate spectrum and establish service rules for a new radio service, the Low Power Location Service.

Respectfully submitted,

The Family Security Company

By: 

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Dated: October 29, 2003